minute creature exhibits a sort of parental care that I have observed only among the *Chilopods* in *Myriapoda*. The *Diplopods* always leave the eggs after safely depositing them. The way in which *Scutigerella* incubates the eggs is slightly different from that of the common centipedes *Scolopendra* and *Geophilus*. The *Scutigerella* simply remains over the eggs that are arranged in the manner of a disc probably till hatching time (which I have not seen). In the case of *Scolopendra* the mother bends once round the eggs and embryos and holds them together by the aid of its legs; and in the case of *Geophilus* the mother coils its long body round the eggs a number of times with the anterior end alone free.

Fig. 2. Egg-mass.

Recently when a stone was turned over I saw a specimen of *Scutigerella* incubating its eggs. The creature instead of running away calmly remained near the eggs and began to eat them. This work took about five minutes, after which it began to move about actively. On examination I found that the contents of four eggs had been completely sucked, the shells alone of which remained, while the fifth one remained untouched. *Scolopendra* also behaves in a similar way but only in captivity.

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XLI.—OBSERVATIONS ON THE OVIPOSITION AND DEVELOPMENTAL STAGES OF A SPECIES OF *POLYXENUS*.

(*With* 2 *plates*).

Since July 1933 I have been engaged in working out the anatomy and development of this Diplopod which occurs fairly abundantly in Kovalam, 7 miles to the south of Trivandrum. A

detailed account of the anatomy and development is in course of preparation and will be published later.

This Pselaphognathous Diplopod (provisionally determined as a species of *Polyxenus*) is seen under stones and under the barks of trees. The adult measures from 3.5 to 4 mm. There are transverse rows of setae on the head and tergites (fig. 1). The pleurae bear setae in bundles. The sternite of the last segment which is apodal bears a thick median bundle of long setae specially constructed to serve as an organ of defence for the animal (fig. 2).

The antennae are eight-jointed, and the two laterally placed eye-groups are each composed of 8 ocelli. There are 11 trunk segments with 13 pairs of legs. Genital openings are situated behind the coxae of the second pair of legs and the anus is situated on the 10th segment.

The females are usually slightly larger than the males and especially so when distended with ripe ova. Copulation takes place many days before oviposition. In the vas deferens the spermatozoa are short and kidney-shaped and appear to be provided with a membranous covering. After the transference of the spermatozoa into the receptacula seminales of the female the membranous covering disappears and the spermatozoa grow in length.

Eggs are laid at night. The mother envelopes the egg-mass with a large number of setae from its postanal median bundle which it voluntarily dislodges for the purpose (fig. 3). This setal envelope efficiently helps to scare away the egg-eating enemies which in this case is a microscopic mite belonging to the family *Tyroglyphidae* and a Neuropteran insect belonging to the family *Psoscidae* commonly known as a book-louse.

Usually 20 to 40 eggs are laid in the form of a plate one layer thick. The eggs are oval or kidney-shaped and measure 0.32 mm. long and 0.18 mm. broad and are arranged vertically with their broader side up.

About nine days after the eggs are laid the eggshell ruptures in the middle transversely and there wriggles out from it the pupa which remains quiescent for seven days.

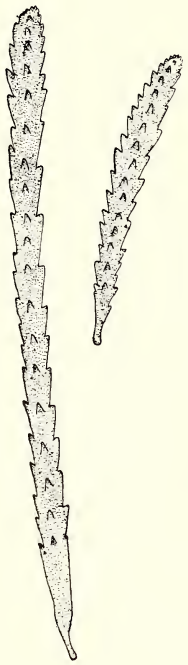
The pupa is encased in a thin membrane formed by a secretion of the embryonic ectodermal cells. The surface of the pupa is tuberculated. Rudiments of antennae, limbs and pleural projections are seen as small buds.

(It may be stated here that the presence of a pupal stage in the life-history of *Pselaphognatha* has not been recorded by any of the previous workers on this group.)

On the fourth day 5 simple ocelli develop on each side of the pupa. The pupa which is at first pure white in colour acquires a brownish tinge.

On the seventh day the pupal membrane ruptures in the region of the head and a tiny white larva bearing 3 pairs of legs comes out and actively moves about and feeds.

The stages of the larval development are shown in the tabulated form. The interval from moult to moult is very variable. It



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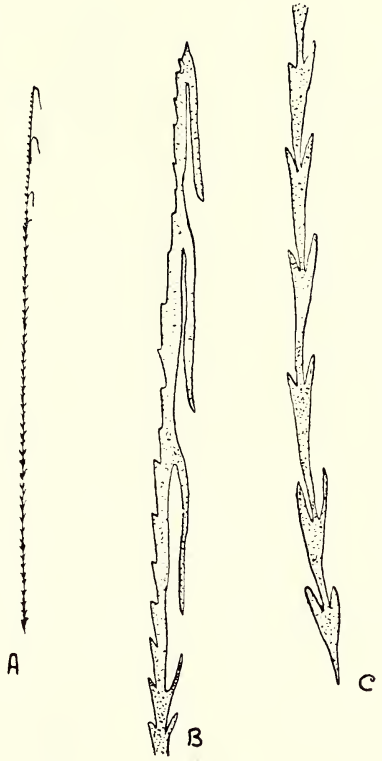

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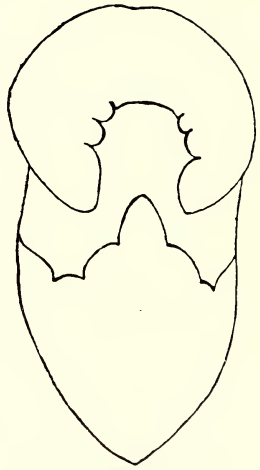

3

1. Ordinary setae. 2. Defensive setae.
3. Pupa, front view (mag. ×170).